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3 LASER-BASED ACOUSTO-OPTIC UPLINK COMMUNICATIONS TECHNIQUE

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5 ABSTRACT OF THE DISCLOSURE

6 An apparatus for enabling acousto-optic communication  
7 comprising an in-water platform comprising means for emitting an  
8 acoustic signal to an acousto-optic interaction zone, an in-air  
9 platform comprising the ability for transmitting a first optical  
10 interrogation beam, the ability for receiving a portion of the  
11 first interrogation beam and a second laser beam formed from the  
12 reflection of the first interrogation beam off of the acousto-  
13 optic interaction zone, the ability for measuring and outputting  
14 a plurality of optical interferences between the portion of the  
15 first interrogation beam and the second reflected beam, and a  
16 signal converter receiving as input the plurality of optical  
17 interferences and outputting an electrical signal representing  
18 the received acoustic telemetry signal at the interrogation  
19 point at the air-water interface.